OIPE IAP87
SEP 15 2005
PATENT & TRADEMARK OFFICE

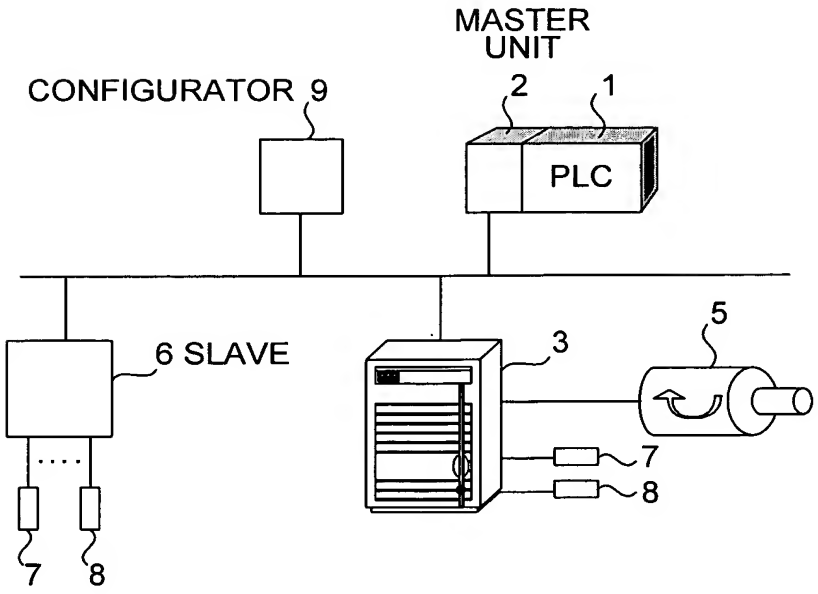

FIG. 1

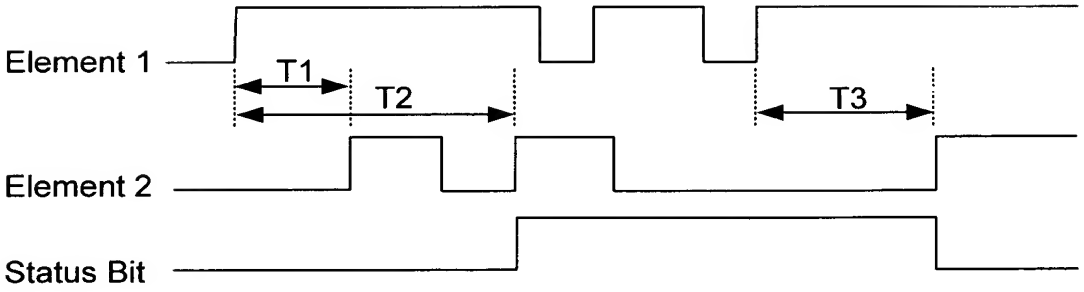

FIG. 4

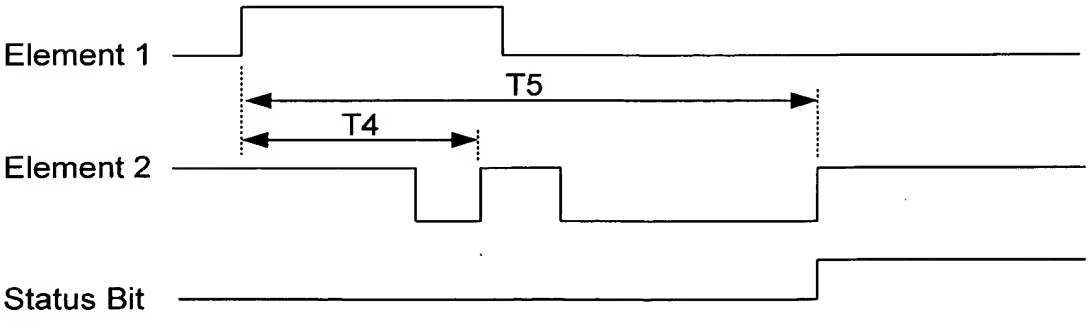

FIG. 5

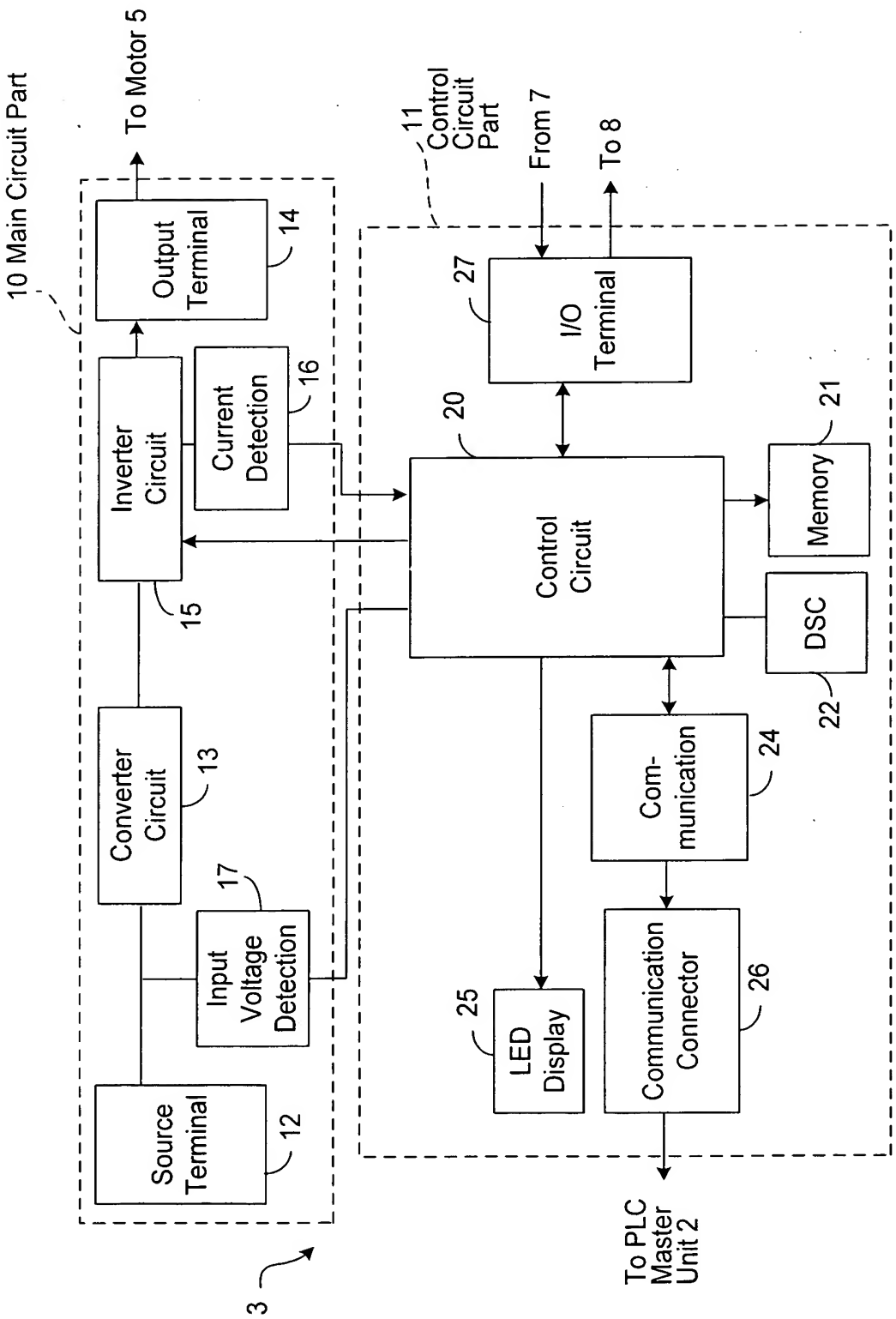
10 Main Circuit Part
To Motor 5
Output Terminal
14
Inverter Circuit
Current Detection
16
15
Converter Circuit
13
Input Voltage Detection
17
Source Terminal
12
3
11 Control Circuit Part
From 7
To 8
27
I/O Terminal
20
Control Circuit
21
Memory
DSC
22
Com-munication
24
25
LED Display
Communication Connector
26
To PLC Master Unit 2

FIG. 2

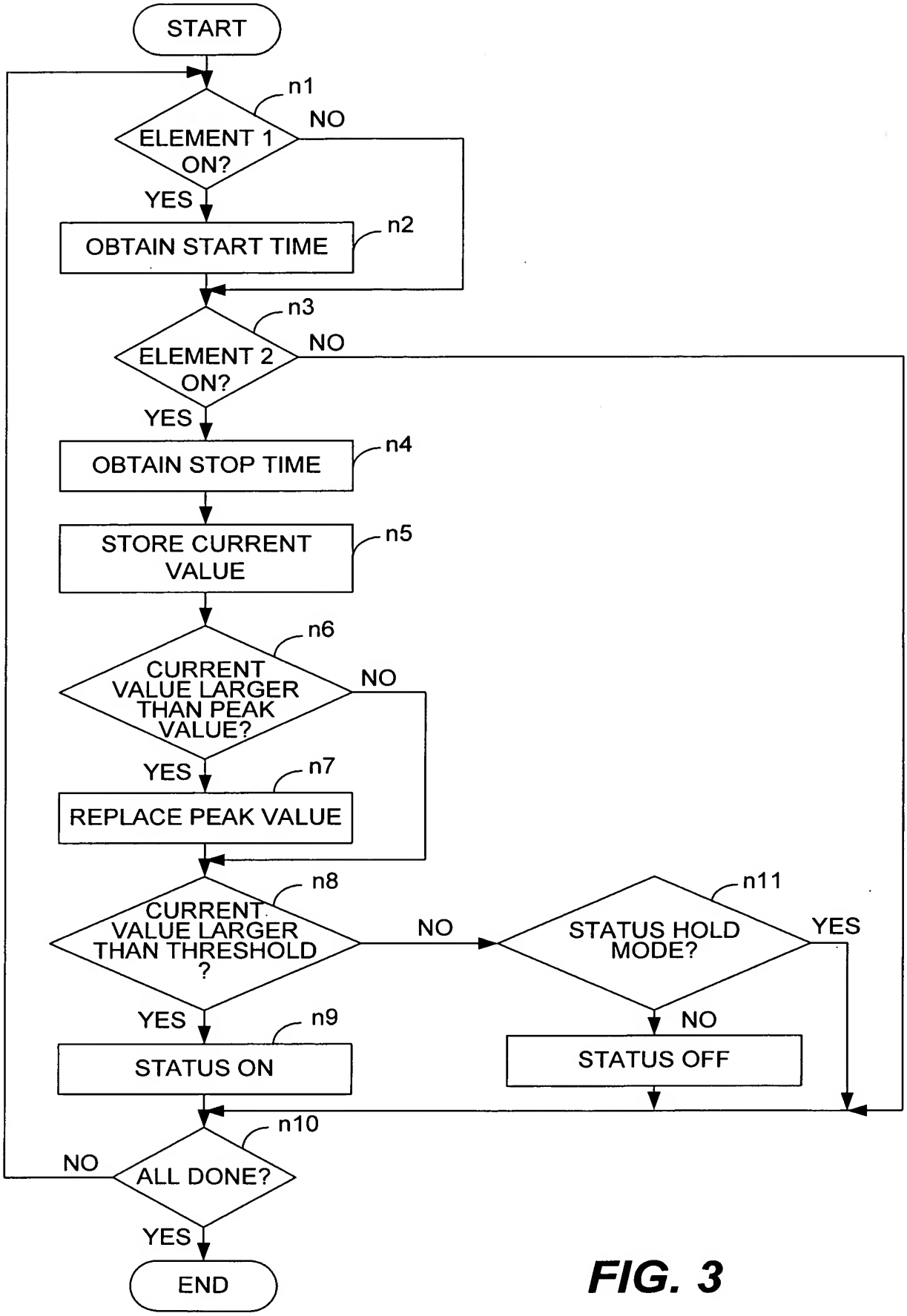
START
n1
ELEMENT 1 ON?
NO
YES
OBTAIN START TIME
n2
n3
ELEMENT 2 ON?
NO
YES
OBTAIN STOP TIME
n4
STORE CURRENT VALUE
n5
n6
CURRENT VALUE LARGER THAN PEAK VALUE?
NO
YES
n7
REPLACE PEAK VALUE
n8
CURRENT VALUE LARGER THAN THRESHOLD ?
NO
n11
STATUS HOLD MODE?
YES
YES
n9
STATUS ON
NO
STATUS OFF
n10
NO
ALL DONE?
YES
END

FIG. 3

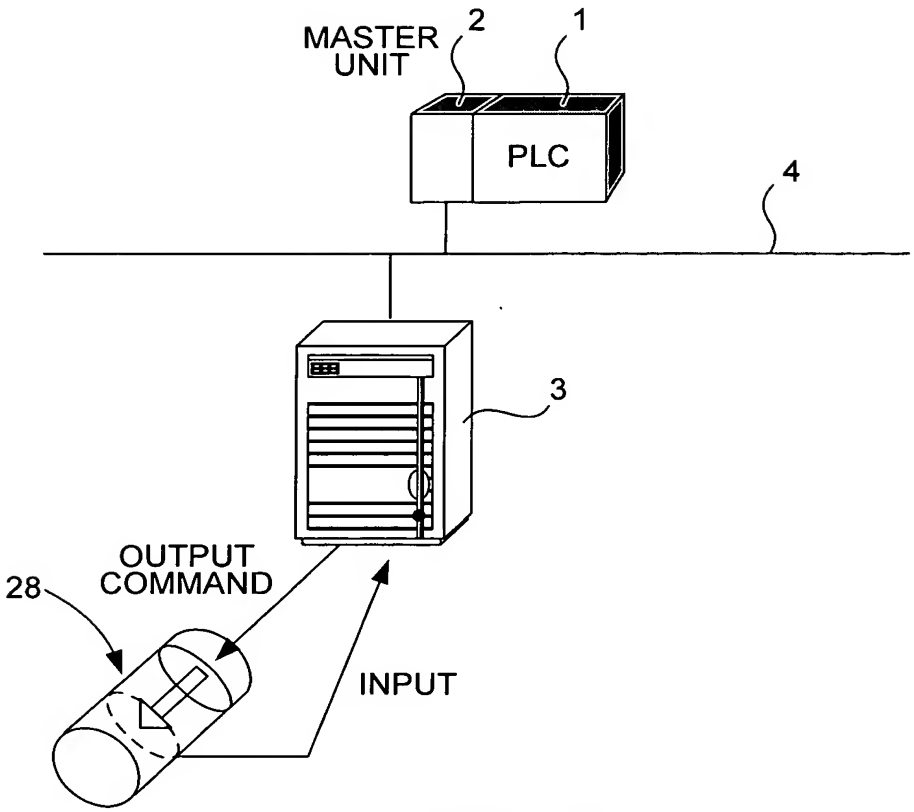
MASTER UNIT
2
1
PLC
4
3
OUTPUT COMMAND
28
INPUT

FIG. 6

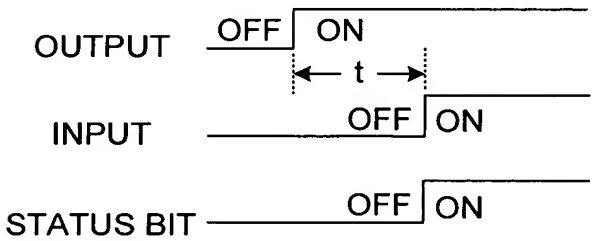
OUTPUT
OFF
ON
t
INPUT
OFF
ON
STATUS BIT
OFF
ON

FIG. 7

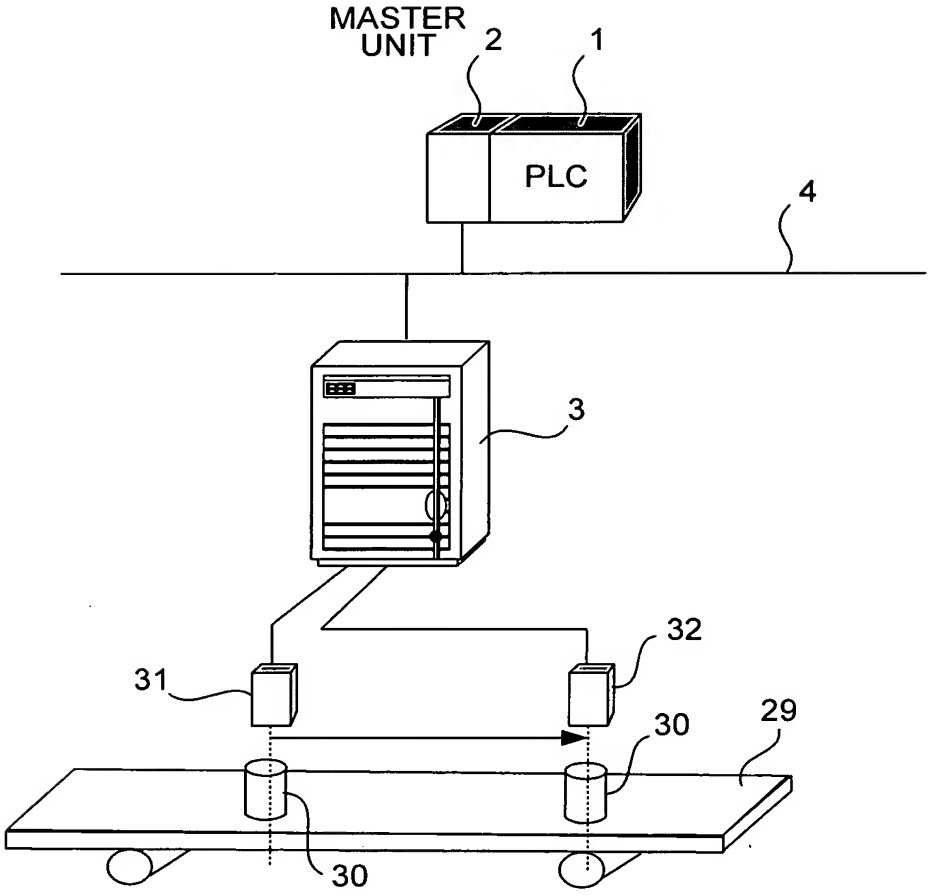
MASTER UNIT
2
1
PLC
4
3
32
31
30
29
30

FIG. 8

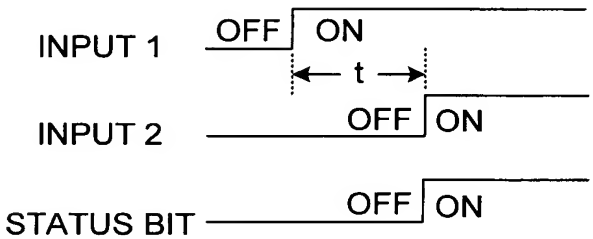
INPUT 1
OFF
ON
t
INPUT 2
OFF
ON
STATUS BIT
OFF
ON

FIG. 9

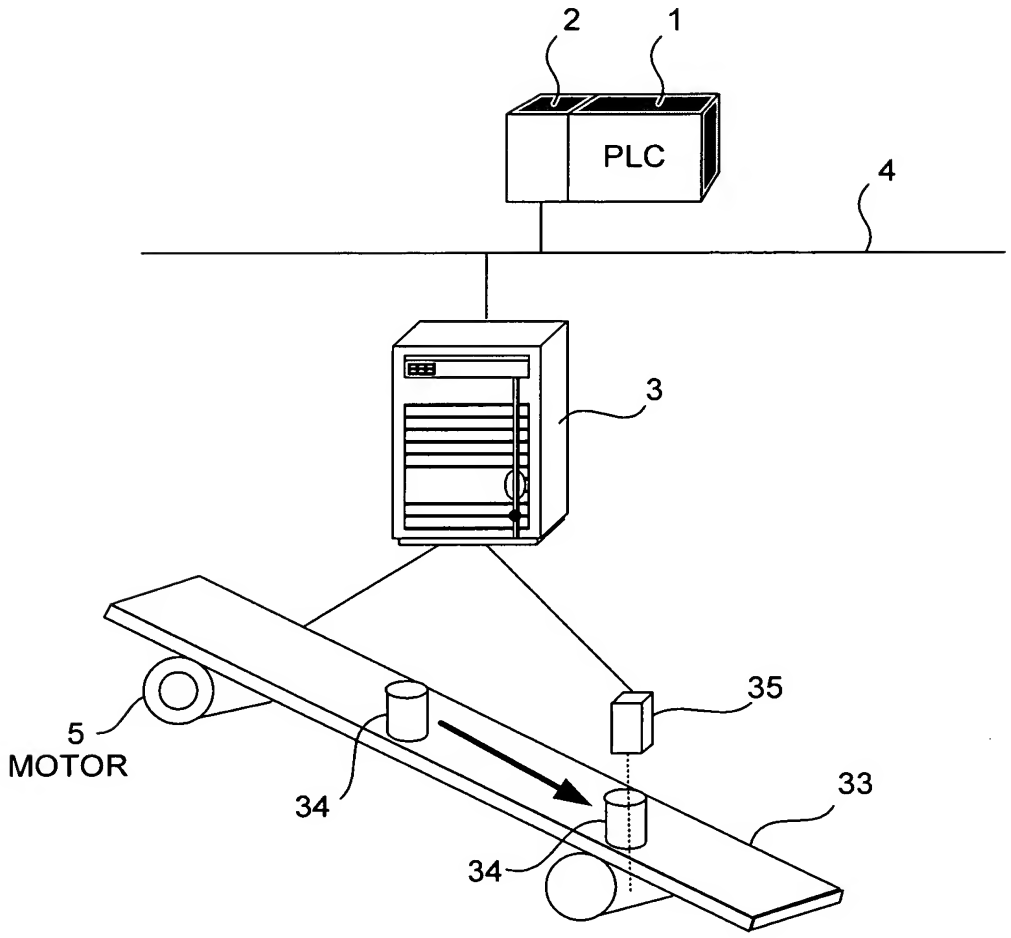
2
1
PLC
4
3
35
5
MOTOR
34
33
34

FIG. 10

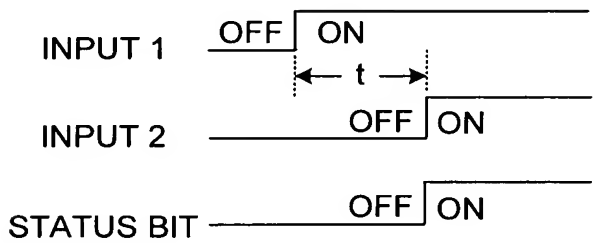
INPUT 1
OFF
ON
t
INPUT 2
OFF
ON
STATUS BIT
OFF
ON

FIG. 11

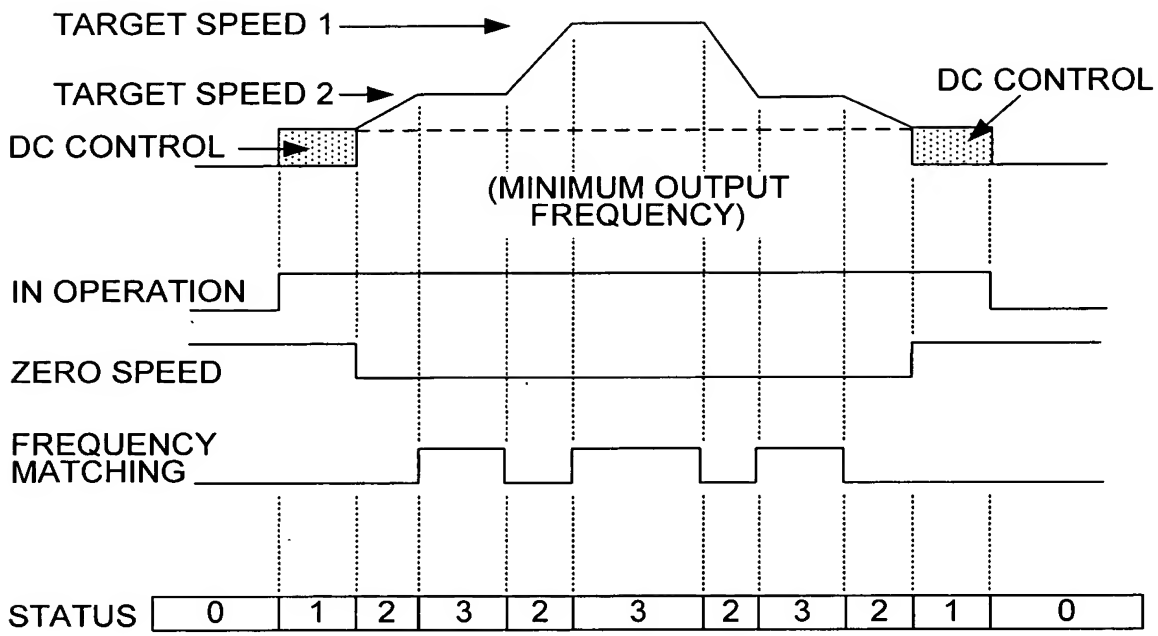

FIG. 12

Data L 0
Data H 0
Data L 1
Data H 1
Data L 2
Data H 2
Data L 3
Data H 3
Data L 4
Data H 4
Data L 5
Data H 5
.
.
Data L 149
Data H 149

FIG. 13

Data State 0 L
Data State 0 H
Data State 1 L
Data State 1 H
Data State 2 L
Data State 2 H
Data State 3 L
Data State 3 H
.
.
Data State 149 L
Data State 149 H

FIG. 14

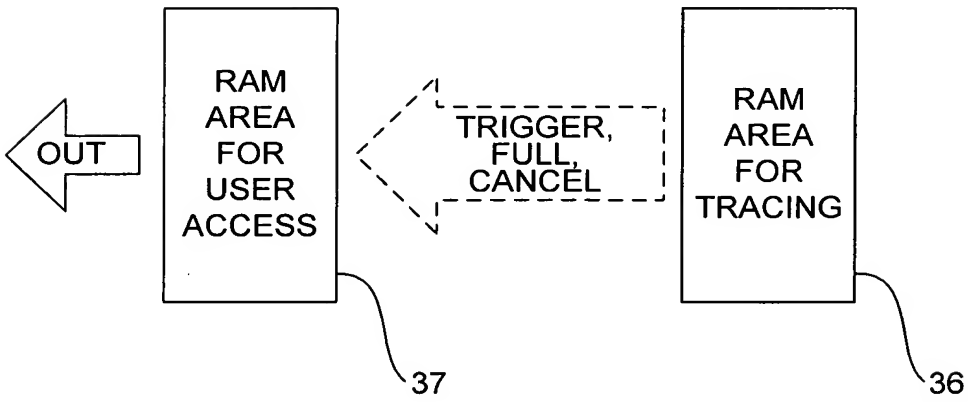

FIG. 15

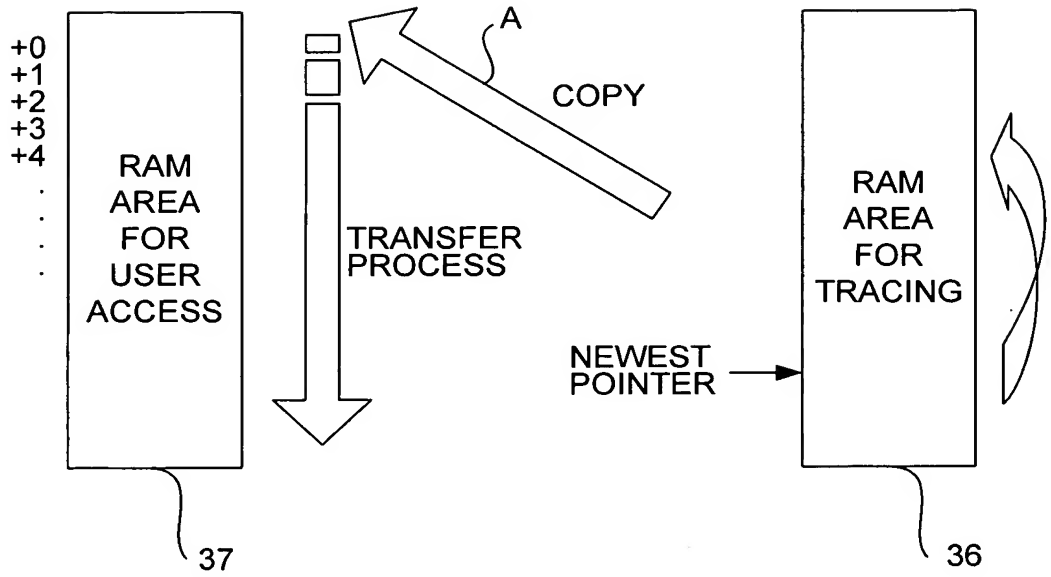
+0
+1
+2
+3
+4
RAM AREA FOR USER ACCESS
37
A
COPY
TRANSFER PROCESS
NEWEST POINTER
RAM AREA FOR TRACING
36

FIG. 16

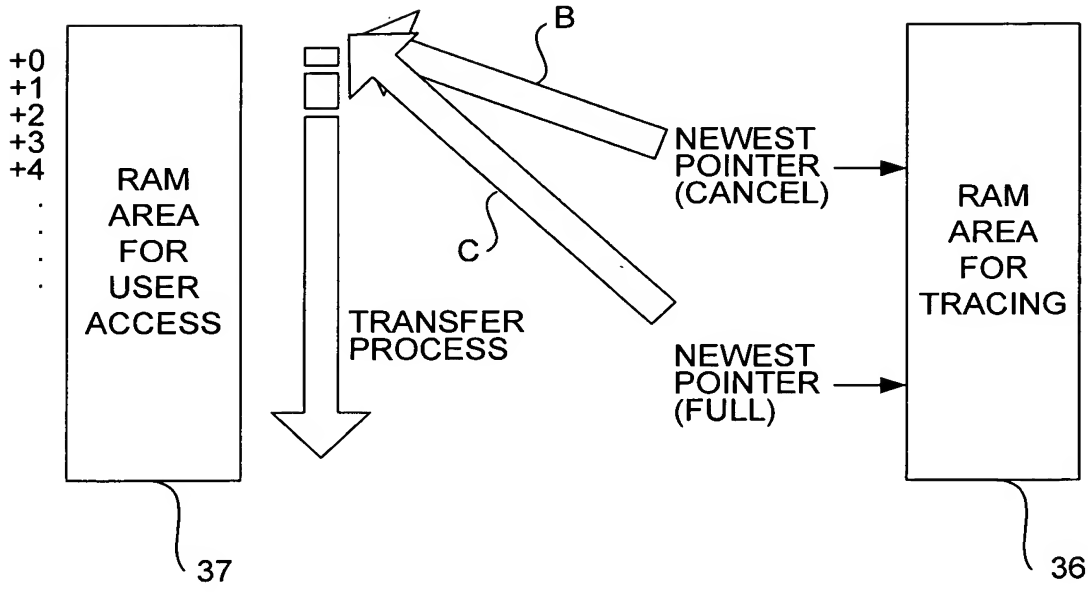
+0
+1
+2
+3
+4
RAM AREA FOR USER ACCESS
37
B
C
TRANSFER PROCESS
NEWEST POINTER (CANCEL)
NEWEST POINTER (FULL)
RAM AREA FOR TRACING
36

FIG. 17